

1st set

SCIENCE

NEW SERIES. VOLUME LII.

JULY-DECEMBER, 1920

NEW YORK
THE SCIENCE PRESS
1920

SCIENCE



THE NEW ERA PRINTING COMPANY,
41 NORTH QUEEN STREET,
LANCASTER, PA.

UNIVERSITY LIBRARY
JUL 8 1920
UNIV. OF MICH.

SCIENCE

NEW SERIES
VOL. LII, No. 1331

FRIDAY, JULY 2, 1920

SINGLE COPIES, 15 CTS.
ANNUAL SUBSCRIPTION, \$6.00

JUST READY

Rivas' Human Parasitology

This is the first work on this subject by an American author. An important and practical feature of the book is the included notes on bacteriology, mycology, laboratory diagnosis, hematology and serology. Emphasis is given throughout to parasitic diseases and their potency as predisposing factors to secondary bacterial infection.

The discussion is complete, beginning with the history of parasitology and taking up protozoan parasites (sarcodina, flagellata, parasitic flagellates in man, sporozoa, ciliata, chlamydozoa, ultramicroscopic organisms, and filterable viruses); metazoan parasites (trematoda, cestoda, nemathelminthes, acanthocephala, gordiacea, nematoda, annelida, arthropoda, arachnida, insecta; vegetable parasites (fungi); macroscopy and microscopy. The text is very fully illustrated.

By DAMASO RIVAS, M.D., PH.D., Assistant Professor of Parasitology and Assistant Director of the Course in Tropical Medicine, University of Pennsylvania. Octavo of 715 pages, with 445 illustrations, some in colors. Cloth, \$8.00 net.

Mallory and Wright's Pathologic Technic

This work gives the technic of bacteriologic methods, bacteriology of various diseases, histologic methods, the special methods used in clinical bacteriology and pathology, and the preparation of bacterial vaccines.

Octavo of 555 pages, with 181 illustrations. By FRANK B. MALLORY, M.D., Pathologist to the Boston City Hospital; and JAMES HOMER WRIGHT, M.D., Pathologist to the Massachusetts General Hospital. Seventh Edition. Cloth, \$4.50 net.

McJunkin's Clinical Microscopy and Chemistry

This work is really a clinical pathology, omitting no step from obtaining the pathologic material to interpretation of the findings. It is a book on the use of the microscope and chemical analysis in the diagnosis of disease.

Octavo of 470 pages, illustrated. By F. A. MCJUNKIN, M.D., Professor of Pathology at Marquette University School of Medicine. Cloth, \$4.00 net.

Todd's Clinical Diagnosis

Dr. Todd's work is more than a clinical diagnosis—it is a complete clinical laboratory guide as well. In every case it clearly points out the significance of the findings. Its illustrations are numerous, instructive and accurate.

12mo of 687 pages, with 262 illustrations, several in colors. By JAMES CAMPBELL TODD, M.D., Professor of Clinical Pathology at the University of Colorado. Fourth Edition. Cloth \$4.50 net.

W. B. SAUNDERS COMPANY

Philadelphia and London

New and Standard Texts

AGRICULTURE

- BOYLE'S VEGETABLE GROWING.** 12mo, 350 pages, with 154 illustrations. Cloth, net, \$2.50
- CURTIS ON LIVE STOCK JUDGING AND SELECTION.** *New (2nd) Edition.* 12mo, 464 pages, with 190 illustrations. Cloth, net, \$2.50
- HOOD'S FARM HORTICULTURE.** (New) 12mo, 339 pages with 142 engravings. Cloth, net\$2.50
- LIPPINCOTT'S POULTRY PRODUCTION.** Second edition, 12mo, 517 pages, with 233 engravings. Cloth, net.....\$2.75
- OSBORN ON AGRICULTURAL ENTOMOLOGY.** 12mo, 374 pages, with 252 engravings, and 1 colored plate. Cloth, net, \$2.50
- STODDART'S AGRICULTURAL CHEMISTRY.** 12mo, 364 pages, illustrated with 23 engravings and 1 plate. Cloth. New edition in preparation.

ANATOMY

- BOWEN'S APPLIED ANATOMY AND KINESIOLOGY.** *New (2nd) Edition.* Octavo, 334 pages, with 197 engravings. Cloth, net\$3.75
- CRYER ON INTERNAL ANATOMY OF THE FACE.** Second Edition. Octavo, 360 pages, with 377 engravings. Cloth, net....\$4.75
- GRAY'S ANATOMY.** *New (20th) Edition,* edited by WARREN H. LEWIS, B.S., M.D., Professor of Physiological Anatomy, Johns Hopkins University. Imperial octavo, 1396 pages, with 1247 large and elaborate engravings. Cloth, \$8.50 net; ¾ leather, net....\$11.00
- TREVES' SURGICAL APPLIED ANATOMY.** *New (7th) Edition,* 12mo, 702 pages, with 153 figures, 74 in color. Cloth, net, \$3.50

BACTERIOLOGY

- ABBOTT'S BACTERIOLOGY.** Ninth Edition. 12mo, 650 pages, with 113 illustrations, 28 in colors. Cloth, net.....\$3.00
- KENDALL'S BACTERIOLOGY.** Octavo, 651 pages, with 98 engravings and 9 colored plates. Cloth, net.....\$5.00
- LABORATORY METHODS OF THE U. S. ARMY.** Second Edition. By the Division of Infectious Diseases and Laboratories of the Surgeon-General's Office. 12mo, 354 pages, illustrated. Price\$1.75
- MORREY'S FUNDAMENTALS OF BACTERIOLOGY.** 12mo, 289 pages, with 165 engravings and 6 plates. Cloth, net....\$3.00
- PARK AND WILLIAMS ON PATHOGENIC MICRO-ORGANISMS.** *New (7th) Edition.* Octavo, 786 pages, with 214 engravings and 9 plates. Cloth, net.....\$6.00

BIOLOGY

- SMALLWOOD'S BIOLOGY.** *New (3d) Edition.* Octavo, 306 pages, with 235 illustrations and 8 plates. Cloth, net\$3.00

CHEMISTRY

- SIMON & BASE'S CHEMISTRY.** Eleventh Edition. Octavo, 648 pages, with 55 engravings and 7 colored plates. Cloth, net.....\$4.00

DIETETICS

- CARTER'S NUTRITION AND CLINICAL DIETETICS.** *New (2nd) Edition.* Octavo, about 680 pages. Ready soon.
- TIBBLE'S DIETETICS.** Octavo, 627 pages, illustrated. Cloth, net.....\$4.50
- MESS OFFICER'S MANUAL.** (New) 12mo, 192 pages, illustrated. Price\$1.50 net

HISTOLOGY

- SCHAFER'S ESSENTIALS OF HISTOLOGY.** Tenth Edition. 8vo, 705 pages, with 645 engravings. Cloth. New edition in preparation.

HYGIENE

- EGBERT'S HYGIENE AND SANITATION.** *New (7th) Edition.* 12mo, 554 pages, with 160 engravings and 5 plates. Cloth, \$3.25 net.
- HARRINGTON'S PRACTICAL HYGIENE.** Fifth Edition. Octavo, 933 pages, 125 engravings, 24 plates. Cloth, net\$6.00
- PRICE ON HYGIENE AND PUBLIC HEALTH.** *New (2nd) Edition.* 12mo, 280 pages. Cloth, net\$1.75
- SIMON ON HUMAN INFECTION CARRIERS.** 12 mo, 250 pages. Cloth, net...\$2.50

PATHOLOGY

- ADAMI AND McCRAE'S TEXT-BOOK OF PATHOLOGY.** Second Edition. Octavo, 878 pages, with 395 engravings and 13 colored plates. Cloth, net\$6.00
- SIMON'S LABORATORY SYLLABUS OF CLINICAL PATHOLOGY.** (New) Small octavo, 86 pages. Cloth, net.....\$2.00

PHARMACOLOGY

- MCGUIGAN'S EXPERIMENTAL PHARMACOLOGY.** (New) Octavo, 251 pages, with 56 engravings and 7 colored plates. Cloth, net\$3.00

PHYSIOLOGY

- STARLING'S PHYSIOLOGY.** *New (3d) Edition.* Octavo, about 1290 pages, with 566 illustrations, 10 in colors.

PHILADELPHIA
706-8-10 Sansom St

LEA & FEBIGER

NEW YORK
2 West 45th Street

CONTENTS AND INDEX.

NEW SERIES. VOL. LII.—JULY TO DECEMBER, 1920

NAMES OF CONTRIBUTORS ARE PRINTED IN SMALL CAPITALS

- Abel, O, Die Stämme der Wirbelthiere, W. D. MATTHEW, 37
 Absorption-Transpiration Ratio in Nutrient Media, E. S. JOHNSTON, 517
 ADAMS, E. Q., Rational System of Units, 527
 Aerological Work in the United States, C. L. MEISINGER, 410
 African Rift Valleys, W. M. DAVIS, 456
 Ages of Animals, J. R. SLONAKER, 134
 Agricultural Work at University of Nanking, 192
 Agronomist and Food Supply, F. S. HARRIS, 395
 Aitoff's Equal-area Projection of the Sphere, 8
 Alaska, Agriculture, 101; Surveys in 1920, 125; Forests, 244
 Albino Vertebrates, J. S. DEXTER, 130
 ALLARD, H. A., Flight of Fireflies and Flashing Impulse, 537
 ALLBUTT, T. C., Medical Research, 115
 ALLEE, W. C., Journal of Morphology, 84
 ALLEN, B. M., Transplantation of Hypophysis, 274
 American Association for the Advancement of Science: Meeting of Pacific Division, W. W. SARGENT, 113; Grants, 403; Minutes of Executive Committee, B. E. LIVINGSTON, 495; Chicago Meeting, 504, B. E. LIVINGSTON, 521; Section O—Agriculture, J. G. LIPMAN, 64; Section of Zoology, 461; Status of Affairs of, B. E. LIVINGSTON, 499; Address of the President, SIMON FLEXNER, 615
 Ameghino, Works of, R. L. MOODIE, 469
 Anatomical Literature, H. V. WILSON, 178
 Anopheles, Larvae, J. ZETEK, 15; Swarming of, L. O. HOWARD, 468
 Anthropological Problems of the Far East, A. HEDLICKA, 567
 Anthropology, Institutes of, K. PEARSON, 371
 Anti-vivisection, California Legislation, 334
 ARNOLD, R., Earthquakes at Los Angeles, 121
 Astronomical Soc., Amer., J. STEBBINS, 542
 Astronomy, Daily Influence of, W. W. CAMPBELL, 545
 Atmometers, B. E. LIVINGSTON and F. THONE, 85
 Atoms in Common Metals, A. W. HULL, 227
 Australia, Booming Lizard, W. H. BONE, 273
 Austrian Meteorologists' Appeal for Aid, 357

 Bacteriology, Twenty-five Years of, S. FLEXNER, 615
 BALDWIN, W. M., X-ray Energy acting upon Frogs' Ova, 229
 Banks, Joseph, Centenary of, 123
 Barbour Microdissection Apparatus, H. B. GOODRICH, 252
 BARTON, S. G., Eric Doolittle, 378
 BARUS, C., Spiral Nebulae, 112; Compression of a Sound Wave, 586
 BATEMAN, H., Electricity and Gravitation, 314
 BATHER, F. A., Fossils and Life, 257
 BAUER, L. A., Light Deflection in Solar Eclipse, 147
 BELLING, J., A. F. BLAKESLEE and M. E. FARNHAM, Chromosomal Duplication, 388
 BERGEIM, O., R. J. MILLER and P. B. HAWK, Gastric Response to Foods, 253
 BERRY, E. W., Diastrophism, 315; Paleontology and Pragmatism, 529
 Biochemical Research in England, 37
 Biometric Laboratories at University College, 30
 Biophysics, A. FORBES, 331
 Bishop Museum and Pan-Pacific Scientific Congress, C. SCHUCHERT, 74; Expeditions, 311
 Black Fish, Autopsy of, G. A. MACCALLUM, 387
 BLAKESLEE, A. F., J. BELLING and M. E. FARNHAM, Chromosomal Duplication, 388
 Blatchley, W. S., Orthoptera, A. N. CAUDELL, 251
 Blood Coagulation, A. R. RICH, 38
 BONE, W. H., Booming Lizard of Australia, 273
 Botany, Introductory Course in, B. M. DAVIS, 597
 BORING, E. G., Gaussian Law, 129; Human Heights, 464
 Bouvier, C. L., La Vie Psychique des Insects, W. M. WHEELER, 443
 BÖVING, A. G., John Sahlberg, 216
 BRASCH, F. E., History of Science Section and Progress of Science, 559
 Brewster Collection of Birds, 32
 BRIGGS, F. N. and W. W. MACKIE, Fungicidal Dusts for Control of Smuts, 540
 British, Association, 209, 233, 257, 273, at Cardiff, 341; Science Guild, 76; Chemists, Headquarters for, 168; Department of Scientific and Industrial Research, 288; National Physical Laboratory, 310; Ministry of Agriculture, 485; National Union of Scientific Workers, 576
 BROOKS, C. F., Amer. Meteorological Soc., 205
 BRUES, C. T., Research Problems, 492
 BURR, F. F., H. H. PLATT and S. R. WILLIAMS, Mirages, 290

 CAJORI, F., Galileo's Experiment, 409
 Calcium Metabolism, E. B. HART, H. STEENBOCK and C. A. HOPPERT, 318; E. F. ROBB, 510
 California, Acad. of Sci., Lectures on Astronomy, 335; Collection of Birds, 486; Institute of Technology, 356
 CAMPBELL, W. W., Relations with Teutonic Scientists, 109; Daily Influence of Astronomy, 545
 Canada, Power Resources, 332
 CARLSON, C. O., Nebraska Academy of Science, 471
 Carnegie Foundation and Research in Colleges, L. A. ROGERS, 176

- CASTLE, W. E., Linked Genes in Rabbits, 156
 CAUDELL, A. N., Orthoptera, W. S. Blatchley, 251
 CHAMBERLIN, T. C., Wisconsin Academy of Science, 1
 Chemical, Research in France and England, 148;
 Conference, International, 244; Soc., Amer., 170,
 C. L. PARSONS, 158, 183, 206, 230, 254, 276,
 297, 319, 345, 369, 390, 414, 564, 588, 612, 642,
 News Service, 403
 CHEN, C. C. and J. B. S. NORTON, Corn Seed Para-
 sites, 250
 CHENEY, E. G., White Pine Blister Rust, 342
 CHILD, C. D., Band Spectrum from Mercury Vapor,
 248
 Chromosomal Duplication, A. F. BLAKESLEE, J.
 BELLING and M. E. FARNHAM, 388
 Chromosomes, Conjugation of, W. NAKAHARA, 82
 Civil Service Employees, 9
 Clements, F. E., Plant Indicators, F. H. KEARNEY,
 609
 COLE, F. N., Amer. Mathematical Soc., 518
 COLLINS, G. N., Maize from Burma, 48
 Comstock, J. H., Introduction to Entomology, V.
 KELLOGG, 61
 Conservation of Quality of Water, W. F. WELLS,
 279
 Corn Seed Parasite, J. B. S. NORTON and C. C.
 CHEN, 250
 Cornell University, Hecksher Foundation, 357
 Corrosion of Firearms, W. J. HUFF, 61
 Cretaceous, Recedent Lake Shores of, J. R. WIE-
 LAND, 537
 Czechoslovakia, Appeal for Publications, A.
 HRDLICKA, 637
 Daggett, Frank Slater, J. C. MERRIAM, 242
 DAVIS, B. M., Heredity and Evolution in Plants,
 410; Gager's Introductory Course in Botany,
 597
 DAVIS, W. M., African Rift Valleys, 456
 Dean on Helmets and Body Armor in Modern
 Warfare, D. FRANKLIN, 201
 DEGEER, G., Determination of Geochronology, 502
 DEMPSTER, A. J., Positive Ray Analysis of Mag-
 nesia, 559
 DENNISON, D. M., Crystal Structure of Ice, 296
 DEXTER, J. S., Albino Vertebrates, 130
 Diastrophism, E. W. BERRY, 315
 DICKSON, B. T., Staining of Plant Pathogen, 63
 Differentials, A. S. HATHAWAY, 35
 Digestion, Psychological Factors in, J. R. KANTOR,
 200
 Discussion and Correspondence, 13, 35, 59, 81, 107,
 129, 154, 175, 198, 223, 248, 272, 290, 314, 339,
 363, 386, 408, 442, 461, 490, 509, 537, 559, 581,
 608
 Diurnal Migration, C. O. ESTERLY, 307
 DOCK, G., Cost of German Publications, 608
 Doctorates in 1920, C. HULL, 478, 514
 Doolittle, Eric, S. G. BARTON, 378
 DRESDEN, A., Amer. Mathematical Soc., 393
 Drift Bottles in Gulf of Maine, J. W. MAVOR, 442
 DUBIN, H. E. and C. FUNK, Vitamine Require-
 ments of Rats, 447
 DUERDEN, J. E., Mutations in Ostrich, 165
 EARLE, F. S., Tropical Research, 363
 Earthquakes at Los Angeles, R. ARNOLD, 121
 EDDINGTON, A. S., Internal Constitution of Stars,
 233
 Edison, T. A., Prize, 381
 EDMONSON, C. H., Spawning Season for Mullet,
 490
 Edwards, Jonathan, on the Mechanistic Concep-
 tion of Life, J. M. C., 409; as a Freudian, E. E.
 SLOSSON, 609
 Efficiency in Thermal Phenomena, E. H. LOCK-
 WOOD, 366
 Einstein's Theory, E. R. LAIRD, 14; E. KASNER,
 413
 Electrical Engineering Course at Mass. Inst. Tech.,
 W. H. TIMBIE, 163
 Electricity and Gravitation, H. BATEMAN, 314
 EMMET, A. D., Fat-soluble A and Xerophthalmia,
 157
 Engineering, Societies, Federated Amer., 194;
 Foundation, 533
 ESTERLY, C. O., Diurnal Migration, 307
 FAIRCHILD, H. L., Pleistocene Clays, 284
 Families and Subfamilies in Zoology, H. C. OBER-
 HOLSER, 142
 Family Names in Zoology, M. W. LYON, JR., 291;
 T. L. CASEY, 491
 FARNHAM, M. E., A. F. BLAKESLEE and J. BEL-
 LING, Chromosomal Duplication, 388
 Fat-soluble A and Xerophthalmia, A. D. EMMET,
 157
 Filters, Wrattan, C. E. K. MEES, 608
 Fisheries, on the Gulf States, 31; Fairport Bio-
 logical Station, 310; Bureau of, Laboratory
 Building at Fairport, Iowa, 503
 FLEXNER, S., William Henry Welch, 417; Twenty-
 five Years of Bacteriology, 615
 Flight of Fireflies and Flashing Impulses, H. A.
 ALLARD, 537
 Floods, C. L. MEISINGER, 17
 Foods and Drugs Act, Enforcement of, 124
 FORBES, A., Biophysics, 331
 FORBES, A. W., and A. G. WEBSTER, Thermal Cal-
 culations, 175
 FORBES, E. B., Influence of Fresh Food in Laeta-
 tion, 467
 Forest School, Yale, 602
 Forestry Education, 168
 Fossil, Use of Term, A. M. MILLER, 408
 Fossils and Life, F. A. BATHER, 257
 FOULQUIER, J. H., S. J., Joseph Pantel, 266
 FRANKLIN, D., Dean on Helmets and Body Armor
 in Modern Warfare, 201
 Free Martin and its Reciprocal, C. G. HARTMAN,
 469
 Freezing Point Lowering and Electrical Conduc-
 tivity, J. A. HARRIS, R. A. GORTNER and J. V.
 LAWRENCE, 494
 Fungicidal Dusts for Control of Smuts, W. W.
 MACKIE and F. N. BRIGGS, 540
 FUNK, C. and H. E. DUBIN, Vitamine Require-
 ments of Rats, 447
 Fur-seals, W. T. HORNADAY, 81; D. S. JORDAN,
 225; of the Pribiloff Islands, 333
 GAGER, C. S., Introductory Course in Botany, 597

- Galileo's Experiment, F. CAJORI, 409
GARRISON, F. H., Greek Science and Modern Science, 178; Scientific and Medical Manuscripts, 226
Gastric Responses to Foods, P. B. HAWK, R. J. MILLER and O. BERGEIM, 253
Gaussian Law, E. G. BORING, 464
Genera and Supergenera, A. S. HITCHCOCK, 107
Geneticists interested in Agriculture, Call for Meeting of, 513
Geochronology, Determination of, G. DEGEER, 502
Geographers, Assoc. of Amer., 438
Geographical Distribution of Marine Algae, W. A. SETCHELL, 187
Geological Excursion, New England Intercollegiate, 334, 458; Soc. of Amer., 486
Geology, Agricultural, J. E. SMITH, 139
GERICKE, W. F., Protein Content of Wheat, 446
Germany, Purchases in, J. L. HOWE, 510; G. DOCK, 608
Germination of Urophlyctes alfarfæ, C. E. SCOTT, 225
Gilman Memorial Lectures on Geography, 358
GLEASON, H. A., Postglacial Time, 340; Biological Journal, 387
GODDARD, R. H., Recording Apparatus for Meteorological Research with Rockets, 559
Gold, World's Production of, 55
Gold, E., Aids to Forecasting, A. M., 155
GOODRICH, H. B., Barbour Microdissection Apparatus, 252
Gorgas, William C., M. W. IRELAND, 53
GORTNER, R. A., J. A. HARRIS and J. V. LAWRENCE, Freezing Point Lowering and Electrical Conductivity, 494
Greenland, Plan of Expedition to, L. KOCH, 552
GUDGER, E. W., Whale Shark on Florida Coast, 191
GUNTHER, H., Distribution and Spermatogenesis of Myriapoda, 36

HARRIS, F. S., Soil Alkali, 198; Agronomist and Food Supply, 395
HARRIS, J. A., R. A. GORTNER and J. V. LAWRENCE, Freezing Point Lowering and Electrical Conductivity, 494
HART, E. B., H. STEENBOCK and C. A. HOPPERT, Calcium Metabolism, 318
HARTMAN, C. G., Free Martin and its Reciprocal, 469
HARVEY, R. B., Plant Disease Organisms, 84
HATHAWAY, A. S., Differentials, 35
HAUSMANN, E., Samuel Sheldon, 355
Hawaiian, Scientific Institutions, 32; Olona V. MACCAUGHEY, 240
HAWK, P. B., R. J. MILLER and O. BERGEIM, Gastric Response to Foods, 253
Health Activities, Score for, 532
HEGNER, R. W., Medical Zoology in Europe, 591
Helium, Arc, G. M. J. MACKAY, 366; and Hydrogen Models, E. C. KEMBLE, 581
HERDMAN, W. A., Oceanography and Sea Fisheries, 209
HERING, C., Mechanical and Electrical Quantities, 509, 636
Hermaphrodites in Mammals, C. R. MOORE, 179
HERRICK, G. W., Scientists and Upbuilding of Peace, 93

High Temperature and Emission from Gases, G. M. J. MACKAY, 636
History of Science Section and Progress of Science, F. E. BRASCH, 559
HITCHCOCK, A. S., Genera and Supergenera, 107
HOAGLAND, D. R., Nutrient Solutions for Plants, 562
HOBBS, W. H., Radicalism and Research, 177
HOLLINGWORTH, H. L., Psychology of Nationality and Internationalism, H. A. PILLSBURY, 511
Honey, a Luxury, M. C. TANQUARY, 538
HOPPERT, C. A., E. B. HART and H. STEENBOCK, Calcium Metabolism, 318
HORNADAY, W. T., Fur-seal Industry, 81
HOWARD, L. O., Swarming of Anopheles, 468
Howchin, W., the Geology of South Australia, R. D. SALISBURY, 586
HOWE, J. L., Purchases in Germany, 510
HRDLIČKA, A., Anthropological Problems of the Far East, 567; Publications for Czecho Slovakia, 637
HUFF, W. J., Corrosion of Firearms, 61
HULL, A. W., Atoms in Common Metals, 227
HULL, C., Doctorates in 1920, 478, 514
Human Heights, E. G. BORING, 464
HUXLEY, J. S., Intersexes in Drosophila, 59
Hybridizing, Laws of, L. J. C., 492
Hydrogen, Peroxide, Decomposition of, S. MORGULIS and V. E. LEVINE, 202; Molecule and Hydrogen Ion, Structure of, I. LANGMUIR, 433
Hygiene, Amer. Jour. of, 602
Hypophysis, Transplantation of, B. M. ALLEN, 274

Ice, Crystal Structure, D. M. DENNISON, 296
Iceland, Eruption of Katla, 243
Illinois Academy of Science, Council Meeting, 533
Industrial Laboratory Apparatus, 600
Influenza in England, 123
Intersexes in Drosophila, J. S. HUXLEY, 59
Iowa Academy of Science, J. H. LEES, 87
IRELAND, M. W., William C. Gorgas, 53

JACKSON, H. H. T., Amer. Soc. Mammalogists, 19
JOHNSTON, E. S., Absorption-Transpiration Ratio in Nutrient Media, 517
JONES, A. T., Sounds of Splashes, 295
JONES, E. L., Surveying from the Air, 574
JONES, L. R., Pasteur, History of a Mind, 15
JORDAN, D. S., Orthogenesis among Fishes, 13; Fur Seals, 225
Journal, Biological, H. A. GLEASON, 387; of Morphology, W. C. ALLEE, 84

KANTOR, J. R., Psychological Factors in Digestion, 200
KASNER, E., Notes on Einstein's Theory, 413
KEARNEY, T. H., Plant Indicators, F. E. CLEMENTS, 609
KELLOGG, V., Entomology, J. H. COMSTOCK, 61
KEMBLE, E. C., Helium and Hydrogen Models, 581
KENT, N. A., Potential Difference in Electric Cell, 205
Kentucky Academy of Science, A. M. PETER, 41
KIRBY, R. S., and H. E. THOMAS, Disease of Wheat, 368
KOCH, L., Plan of Expedition to Greenland, 552
KLOPSTEG, P. E., Titrating Electrometrically, 18

- Kofoed on Noctiluca, M. M. METCALF, 110
- Lactation, Influence of Fresh Food in, E. B. FORBES, 467
- LAIRD, E. R., Einstein's Theory and Spectrum Lines, 14
- LANGMUIR, I., Structure of Hydrogen Molecule and Hydrogen Ion, 433
- LAWRENCE, J. V., J. A. HARRIS and R. A. GORTNER, Freezing Point Lowering and Electrical Conductivity, 494
- LEES, J. H., Iowa Academy of Science, 87
- LEIBY, R. W., N. C. Academy of Science, 185
- LEVINE, V. E., and S. MORGULIS, Decomposition of Hydrogen Peroxide, 202
- Levulose Sirup, J. J. WILLAMAN, 351
- Library, Obligation of Investigator, N. E. STEVENS, 223
- Light Deflections in Solar Eclipse, L. A. BAUER, 147
- LIND, S. C., Radium Emanation, 640
- Linked Genes in Rabbits, W. E. CASTLE, 156
- LIPMAN, J. G., Section O—Agriculture, 64
- Lister, Institute, 15; Memorial, 150
- LIVINGSTON, B. E., Minutes of Executive Committee, 495; Chicago Meeting of the American Association, 521; Status of Affairs of American Assoc., 499; and F. THONE, Atmometers, 85
- LOCKWOOD, E. H., Efficiency in Thermal Phenomena, 366
- LOEB, J., Proteins and Colloid Chemistry, 449
- LYON, M. W., JR., Family and Subfamily Names in Zoology, 291
- M., A., Aids to Forecasting, E. Gold, 155
- MACARTHUR, C. G., Scientific Teaching of Science, 347
- MACCALLUM, G. A., Autopsy of Black Fish, 387
- MACCAUGHEY, V., Hawaiian Olona, 240
- MACDONALD, R. M., Scientific Reprints, 131
- McEWEN, G. F., Physical Constants of the Ocean, 62
- MACKEY, G. M. J., Helium Arc, 366; High Temperatures and Emission from Gases, 637
- MACKIE, W. W., and F. N. BRIGGS, Fungicidal Dusts for Control of Smuts, 540
- MACMILLAN, W. D., Structure of the Universe, 67
- MCNAIR, F. W., Sidewalk Mirage, 201
- Maine Agricultural Station, Directorship of, C. D. WOODS, 584
- Maize from Burma, G. N. COLLINS, 48
- MALOTT, C. A., Static Rejuvenation, 182
- Mammalogists, Amer. Soc., H. H. T. JACKSON, 19
- Mathematical, Requirements, National Committee, 289; Soc., Amer., A. DRESDEN, 393; F. N. COLE, 518; Assoc. of Amer., 577
- Mathematische Zeitschrift, G. A. MILLER, 155
- MATTHEW, W. D., Die Stämme der Wirbelthiere, O. Abel, 37
- MAVOR, J. W., Drift Bottles in Gulf of Maine, 442
- Mayer Memorial Medal, 9
- Mechanical Engineers, Amer. Soc., 437; Aeronautical Section, 401
- Medical, Education, 109; Research, T. C. ALLBUTT, 115; Education in the United States, 148; Schools, Scholarships, 169; College, University of Cincinnati, Centenary, 505
- MEES, C. E. R., Wrattan Filters, 608
- MEISINGER, C. L., Floods, 17; Tornadoes, 293; Aerological Work in the United States, 410; Hurricanes, 638
- MELTZER, S. J., Men of Science in Rumania, 292
- Mendola, Lake, Flora of, H. W. RICKETT, 641
- Mercury Vapor, Band Spectrum, C. D. CHILD, 248
- MERRIAM, J. C., Frank Slater Daggett, 242; Research Spirit of Average Man, 473
- METCALF, M. M., Kofoed on Noctiluca, 110; Classification of Opalinidae, 135
- Meteorological Soc., Amer., C. F. BROOKS, 205; Research with Rockets, R. H. GODDARD, 559
- Meteorology, Notes on, LE ROY L. MEISINGER, 17; 293, 410; 638
- Microscopic Under-sea Life, 102
- MILLER, A. M., Use of Term Fossil, 408
- MILLER, G. A., Mathematische Zeitschrift, 155
- MILLER, R. J., O. BERGEIM and P. B. HAWK, Gastric Response to Foods, 253
- Mills and Fishways, R. T. MORRIS, 365
- Mines, Bureau of, 149; Missouri Experiment Station, 245; Low Temperature Laboratory, R. B. MOORE, 483
- Mirages, H. H. PLATT, F. F. BURR, S. R. WILLIAMS, 290
- MONTGOMERY, P. M., Reprints from Scientific Institutions, 583
- MOODIE, R. L., Works of Ameghino, 469
- MOORE, C. R., Herinaphrodites in Mammals, 179
- MOORE, R. B., Low Temperature Laboratory of Bureau of Mines, 483
- MOOREHEAD, W. K., Explorations in Panhandle of Texas, 339
- MORGULIS, S., Scientific Men in Russia, 108; and V. E. LEVINE, Decomposition of Hydrogen Peroxide, 202
- MORRIS, R. T., Mills and Fishways, 365
- Morse, Harmon Northrup, I. REMSEN, 497
- Museum, of Nat. Hist., Expedition to Asia, 380; of Buffalo Soc. Nat. Sci., 632
- Myriapoda, Distribution and Spermatogenesis of, H. GUNTHER, 36
- NAKAHARA, W., Conjugation of Chromosomes, 82
- Naples Zoological Station, E. B. POWERS, 323
- National, Committee on Mathematical Requirements, 289; Research Council, Agricultural Work of, 379; Botanic Garden, 387; Committee on Electrical Insulation, 402; Academy of Sciences, 519
- Naturalists, Amer. Soc., 437
- Nebraska Academy of Science, C. O. CARLSON, 471
- New York, Acad. of Sci., 633; Botanical Garden, Lectures, 268
- Nela Research Laboratory, Reorganization, 150
- Nervous System, Efferent Path of, F. H. PIKE, 111
- Nomenclature, Zoological, 291, 491, 603
- North Carolina Acad. of Sci., R. W. LEIBY, 185
- NORTON, J. B. S. and C. C. CHEN, Corn, Seed Parasites, 250
- Nutrient Solutions for Plants, D. R. HOAGLAND, 562
- OBERHOLSER, H. C., Families and Subfamilies in Zoology, 142
- Observatory in Cleveland, 531

Oceanography and Sea Fisheries, W. A. HERDMAN, 209

Oersted's Discovery, 288

Office of Development Work, 219

Ohio, Academy of Science, E. L. RICE, 136; State University, Department of Chemistry, 438

Oil, Origin of, C. W. WASHBURN, 60

Opalinidae, Classification of, M. M. METCALF, 135

Oriental Institute, Acquisitions, 402

Oriental and Occidentals, Meeting, 103

Ornithologists' Union, Amer., 78, 437, 555

Orthogenesis among Fishes, D. S. JORDAN, 13

Orton Memorial Library, 439

Ostrich, Mutations in, J. E. DUERDEN, 165

Paleontology and Pragmatism, E. W. BERRY, 529

PALMER, C. S., Reversal of Sodium Line, 176

Pantel, Joseph, J. H. FOULQUIER, S. J., 266

PAPPENHEIMER, A. M., Winternitz on Pathology of War and War Gas Poisoning, 367

PARSONS, C. L., Amer. Chem. Soc., 158, 183, 206, 230, 254, 276, 297, 319, 345, 369, 390, 414, 564, 588, 612, 642

PARTIDGE, E. A., Galileo's Experiment, 272

Pasteur, History of a Mind, L. R. JONES, 15; Institute of Paris, 484

PATTERSON, J. T., Roof Rat, 249

PEARSON, K., Institutes of Anthropology, 371

Pennsylvania, University of, Lectures, 460

PETER, A. M., Kentucky Academy of Science, 41

Philadelphia Acad. of Nat. Sci., 633

Philosophy and Ethics of Research and Publication, F. PLACE, JR., 583

Phosphates in Morocco, 484

Physical, Constants of the Ocean, G. F. McEWEN, 62; Soc., Amer., 577

Physiological Reviews, 459

PIKE, F. H., Efferent Path of Nervous System, 111

Pillsbury on Psychology of Nationality and Internationalism, H. L. HOLLINGWORTH, 511

PLACE, F., JR., Philosophy and Ethics of Research and Publication, 583

Plant, Disease Organisms, R. B. HARVEY, 84; Pathology at the Brooklyn Botanical Garden, 576

Plants, Uses of by Indians, O. A. STEVENS, 99

PLATT, H. H., F. F. BURR and S. R. WILLIAMS, Mirages, 290; Road Reflections, 467

Pleistocene Clays, H. L. FAIRCHILD, 284

Positive Ray Analysis of Magnesia, A. J. DEMPSTER, 559

Postglacial Time, H. A. GLEASON, 340

Potential Difference in Electric Cell, N. A. KENT, 205

POWERS, E. B., Naples Zoological Station, 323

Pricer, John Lossen, H. J. VAN CLEAVE, 242

Proteins and Colloid Chemistry, J. LOEB, 449

Protozoa in Sawdust, C. W. STILES, 315

Psychology, Physical Measurements in, A. P. WEISS, 51

Quotations, 15, 37, 109, 273, 292, 341, 387

Radicalism and Research, N. E. STEVENS, 25; W. H. HOBBS, 177

Radium Emanation, S. C. LIND, 640

Rat, Roof, J. T. PATTERSON, 249

Rational System of Units, E. Q. ADAMS, 527

REED, H. S., Plight of Scientific Periodicals, 466

Registrar General, Report of, 54

Relation between Mechanical, Chemical and Electrical Quantities, C. HERING, 509

REMSEN, I., Harmon Northrup Morse, 497

Reprints from Scientific Institutions, P. M. MONTGOMERY, 583

Research, and Radicalism, N. E. STEVENS, 25; W. H. HOBBS, 177; Biochemical, 37; and the College Teacher, L. D. WELD, 45; Cotton, 76; Council, National, 77, 379, 402; Medical, T. C. ALLBUTT, 115; Chemical, France and England, 148; in Colleges and Carnegie Foundation, L. A. ROGERS, 176; Chemical, in India, 217; North American Forest, 218; Aviation, 267; and Agriculture, W. P. THOMPSON, 301; Tropical, F. S. EARLE, 363; Spirit of Average Man, J. C. MERIAM, 473; Problems, C. T. BRUES, 492; Forest, Survey of, 532; in France, Italy, Belgium and Japan, 400

RICE, E. L., Ohio Acad. of Sci., 136

RICH, A. R., Blood Coagulation, 38

RICKETT, H. W., Flora of Lake Mendota, 641

Righi, Augusto, A. TROWBRIDGE, 122

Road, Building with Federal Aid, 31; Reflections, H. S. PLATT, 467

ROBB, E. F., Calcium Metabolism, 510

ROBERTSON, J. K., Spectrum of Mercury Vapor, 386

Rockefeller Institute, 56

ROGERS, L. A., Carnegie Foundation and Research in Colleges, 176

Royal Society, Medals of, 632

Rumania, Men of Science, S. J. MELTZER, 292

Russia, Scientific Men in, S. MORGULIS, 108

Sahlberg, John, A. G. BÖVING, 216

SALISBURY, R. D., the Geology of South Australia, W. Howchin, 586

Salmon, Atlantic and Pacific, H. B. WARD, 264

SARGENT, W. W., Pacific Division of Amer. Assoc., 113

SAUNDERS, F. A., Visible Sound Waves, 442

SCHUCHERT, C., Pan-Pacific Scientific Congress and Bishop Museum, 74; Second Norwegian Arctic Expedition, 131; Silurian and Devonian in Shropshire and France, 339

Science, and the Public, 292; Scientific Teaching of, C. G. MACARTHUR, 347; and the Nation, 585

Scientific, Notes and News, 10, 32, 57, 78, 104, 125, 151, 171, 195, 219, 245, 269, 290, 311, 335, 358, 382, 404, 439, 461, 487, 506, 535, 558, 578, 634; Books, 15, 37, 61, 110, 131, 155, 178, 201, 226, 251, 340, 367, 410, 443, 511, 586, 609; Events, 18, 30, 54, 76, 101, 123, 148, 168, 192, 217, 243, 267, 287, 310, 332, 356, 379, 401, 437, 458, 484, 504, 531, 554, 581, 600, 632; Congress, Pan-Pacific, and Bishop Museum, C. SCHUCHERT, 74; Conference, Pan-Pacific, 286, Resolutions, 325, 352; Matters of Interest in Congress, 102; Men in Russia, S. MORGULIS, 108; Reprints, R. M. MACDONALD, 131; Books

- in France, 217; Periodicals, Plight of, H. S. REED, 466; Societies meeting at Chicago, 505
Scientists and Upbuilding of Peace, G. W. HER-
RICK, 93
SCOTT, C. E., Germination of Urophlyctes alfalfa,
225
Second Norwegian Arctic Expedition, C. SCHU-
CHERT, 131
SETCHELL, W. A., Geographical Distribution of
Marine Algae, 187
Sheldon, Samuel, E. HAUSMANN, 355
SHARP, L. W., Request for Separates, 637
SHELFORD, V. E., Preservation of Wild Life, 464
Shull, A. F., Principles of Animal Biology, H. J.
VAN CLEAVE, 342
SHULL, C. A., Sulphur as Fertilizer, 376
Sidewalk Mirage, F. W. MCNAIR, 201
Silurian and Devonian in Shropshire and France,
C. SCHUCHERT, 339
Singer, C., Greek Science and Modern Science, F.
H. GARRISON, 178; Scientific and Medical Manu-
scripts, F. H. GARRISON, 226
SLONAKER, J. R., Ages of Animals, 134
SLOSSON, E. E., Jonathan Edwards as a Freudian,
609
SMITH, J. E., Agricultural Geology, 139
Sodium Line, Reversal, C. S. PALMER, 176
Soil, Fertility, R. STEWART, 21; Alkali, F. S. HAR-
RIS, 198
Sound Waves, Visible, F. A. SAUNDERS, 442; Com-
pression of, C. BARUS, 586
Sounds of Splashes, A. T. JONES, 295
South African Association, Bulawayo Meeting of,
555
Spawning, Grounds of the Eel, 192; Season for
Mullet, C. H. EDMONDSON, 490
Special Articles, 18, 38, 62, 85, 111, 134, 156, 179,
202, 227, 252, 274, 295, 318, 342, 368, 388, 413,
446, 469, 494, 517, 540, 562, 586, 611
Spectrum of Mercury Vapor, J. K. ROBERTSON,
386
Spiral Nebulae, C. BARUS, 112
Staining of Plant Pathogen, B. T. DICKSON, 63
Stars, Internal Constitution of, A. S. EDDINGTON,
233
Static Rejuvenation, C. A. MALOTT, 182
STEENBOCK, H., E. B. HART and C. A. HOPPERT,
Calcium Metabolism, 318
STEVENS, N. E., Radicalism and Research, 25;
Obligation of Investigator to Library, 223
STEVENS, O. A., Uses of Plants by Indians, 99
STEWART, R., Illinois System of Soil Fertility, 21
STILES, C. W., Protozoa in Sawdust, 315
Sulphur as Fertilizer, C. A. SHULL, 376
Surveying from the Air, E. L. JONES, 574

TANQUARY, M. C., Is Honey a Luxury, 538
Temperature Prediction, G. L. WEST, 61
Teutonic Scientists, Relations with, W. W. CAMP-
BELL, 109
Texas, Explorations in Panhandle, W. K. MOORE-
HEAD, 339
Thermal Calculations, A. W. FORBES and A. G.
WEBSTER, 175
THOMAS, H. E., and R. S. KIRBY, Disease of
Wheat, 368
THOMPSON, W. P., Research and Agriculture, 301
THONE, F., and B. E. LIVINGSTON, Atmometers, 85

TIMBIE, W. H., Course in Electrical Engineering at
Mass. Inst. Tech., 163
TITCHENER, E. B., Wilhelm Wundt, 500
Titrating Electrometrically, P. E. KLOPSTEG, 18
Tornadoes, C. L. MEISINGER, 293
Toronto, University of, Conference on Recent Ad-
vances in Physics, 554
Transverse Vibrations of Rods, A. G. WEBSTER, 154
TROWBRIDGE, A., Augusto Righi, 122

United States, Dimensions and Area, 287; Popula-
tion of, 382
Universe, Structure of, W. D. MACMILLAN, 67
University and Educational News, 13, 34, 59, 81,
107, 128, 153, 174, 195, 223, 247, 271, 290, 313,
337, 362, 385, 407, 441, 463, 490, 509, 537, 558,
581, 635

Van Beneden, Prof., 55
VAN CLEAVE, H. J., John Lossen Pricer, 242;
Shull, A. F., Principles of Animal Biology, 342
Venereal Diseases, Conference on, 193
Venezuela, Exploration, E. B. WILLIAMSON, 154
Vitamine Requirements of Rat, C. FUNK and H. E.
DUBIN, 447

WARD, H. B., Atlantic and Pacific Salmon, 264
WASHBURN, C. W., Origin of Oil, 60
WEBSTER, A. G., Transverse Vibrations of Rods,
154; and A. W. FORBES, Thermal Calculations,
175
WEISS, A. P., Physical Measurements in Psychol-
ogy, 51
Welch, William Henry, S. FLEXNER, 417
WELD, L. D., College Teacher and Research, 45
WEST, F. L., Long-time Temperature Prediction, 61
WILLEY, A., A Question of Bibliography, 608
WELLS, W. F., Conservation of Quality of Water,
279
Whale Shark on Florida Coast, E. W. GUDGER, 191
Wheat, Varieties, 268; Disease of, R. S. KIRBY
and H. E. THOMAS, 368; Protein Content of,
W. F. GERICKE, 446
WHEELER, W. M., La Vie Psychique des Insectes,
C. L. BOUVIER, 443
White Pine Blister Rust, E. G. CHEYNEY, 342
WIELAND, J. R., Recent Lane Shores of the Cre-
taceous, 537
Wild Life, Preservation of, V. E. SHELFORD, 464
WILLAMAN, J. J., Levulose Sirup, 351
WILLIAMS, S. R., H. H. PLATT and F. F. BURR,
Mirages, 290
WILLIAMSON, E. B., Exploration of Venezuela, 154
WILSON, H. V., Anatomical Literature, 178
Wilson, James, 267
Winternitz on Pathology of War and War Gas
Poisoning, A. M. PAPPENHEIMER, 367
Wisconsin Academy of Science, T. C. CHAMBER-
LIN, 1
WOODS, C. D., Directorship of Maine Agricultural
Station, 584
Wundt, Wilhelm, E. B. TITCHENER, 500

X-ray Energy acting upon Frogs' Ova, W. M.
BALDWIN, 229

Yale University, Honorary Degrees, 10

ZETEK, J., Anopheles Larvæ, 15
Zoology, Medical, in Europe, R. W. HEGNER, 591

